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NPIC/TSSG/RED-1814-69  
30 September 1969

MEMORANDUM FOR: Chief, Research & Engineering Division, TSSG/NPIC  
SUBJECT : Contractual and In-House Activities of the Human Factors  
Section, ATB/RED

ATB/HFS Contracts



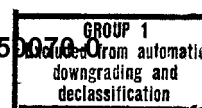
25X1

\*Follow-ons from Phase I tasks

Declass Review by NIMA/DOD

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25X1 2. [REDACTED]

a. Photographic and Line-Scan Imagery Experimentation -

25X1 [REDACTED] GOAL - To establish preliminary psychophysical relations between photographic and line-scan imagery resolution requirements; by empirically comparing photo resolution-vs.-information parameters to line-scan interpretation of the same target models.

25X1 b. Photographic Resolution Study: Ground-Order-of-Battle -

[REDACTED] GOAL - To establish objectively photographic ground resolution requirements for the analysis of ground-order-of-battle targets; by conducting a psychophysical study with progressively improving imagery of domestic GOB targets to determine the resolution break point at which no further intelligence information can be extracted from photography.

25X1 3. [REDACTED] Imagery Experimentation Support (T&M) -

GOAL - To assist [REDACTED] (and other NPIC contractors as designated by RED) in the conduct of experimental imagery interpretation research studies by: (a) Collecting imagery from various sources as required; (b) Formatting imagery and subject instructions in accordance with experimental design; (c) Administering experimental procedures among NPIC interpreters; (d) Preparing collected data for final analysis.

25X1 25X1 4. [REDACTED] Visual Perception Consultation (Personal Services) - [REDACTED]

GOAL - To provide RED personnel with expert guidance on problems involving interpreter visual perception, perceptual training, and physiological optics, in support of both in-house and contractual research efforts.

5. Others

25X1 [REDACTED] Personal Services (IEG)  
"Computer Learning Techniques" - new project  
"Advanced PI Chair" - new project  
"Color Viewing Study" - new project

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ATB/HFS In-House Activities

Priority 1

1. TICOF -- Technology Integration and Checkout Facility
2. PI Process Research -- Test Development
3. Microscope Design Criteria -- Development and Applications
4. Near Real-Time Acquisition Systems Exploitation -- Man-machine Interface Criteria; Exploitation Procedures R&D
5.
6. Human Factors S-O-A -- Library; Liaison; Application
7. Small Projects Support

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Priority 2

1. Visual Process Research -- Basic Research; Establish Vision Criteria
2. Image Quality Determination -- Support/Experimental Design
3. Hardware and Exploitation Procedures Development -- Support; Application of HF Developments
4. In-House Training -- Support; Determine Needs, Propose Solutions
5. Target Resolution Test Requirements -- Support; Determine Needs for Alternative to AF Bar Targets

Priority 3

1. Eye Tracking -- Literature Review and Liaison
2. Audio Collateral -- Literature Review and Liaison
3. New Stereo Techniques and Applications -- Literature Review and Liaison
4. Automatic Target Recognition -- Literature Review and Liaison
5. Negative to Positive Film Viewing Technology Support -- Literature Review and Liaison

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TICOF

Maintain responsibility for designing experiments, collecting and analyzing data collected in operational settings, and preparing necessary documentation to evaluate photo interpreter techniques and hardware.

PI Process Research

Develop a battery of aptitude, attitude, motivation, perception and achievement (performance) tests to aid in PI-candidate selection, career development and training evaluation.

Microscope Design Criteria

Apply techniques and test materials developed by [redacted] and others to ensure that microscope design criteria adequately incorporate physiologic optics requirements.

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Near Real-Time Acquisition Systems Exploitation

(1) Maximize compatibility between the output characteristics of the acquisition system and the capabilities of the visual-perceptual systems. (2) Support in-house and contractual efforts to develop exploitation techniques applicable to near real-time systems.

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Human Factors S-O-A

(1) Maintain a Human Factors library of documents applicable to Center activities. (2) Remain cognizant of, and recommend application of, relevant HF S-O-A developments of direct or potential significance to the Center. (3) Promote and maintain close liaison with appropriate Government, military and civilian personnel whose HF expertise will advance Center objectives, and/or who have, within security limits, a "need to know" the Center's HF requirements, research findings and recommendations.

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#### Small Projects Support

Continue to maintain a capability for timely and meaningful responses to requests for limited assistance in matters pertaining to Human Factors.

#### Visual Process Research

Maintain responsibility for designing experiments, conducting requisite research, and disseminating information derived therefrom on matters pertaining to human resources visual requirements and man-machine "Visual-Perceptual-Display" compatibility.

#### Image Quality Determination

Support the Center's "Image Quality Determination Committee" as well as contractual efforts to improve current film processing requirements and methodologies designed to evaluate the quality of imagery.

#### Hardware and Exploitation

#### Procedures Development

#### Evaluation

Support the development of procedures to evaluate the impact of innovations in hardware and exploitation techniques on relevant performance of the Center's human resources.

#### In-House Training

Complement existing training programs by supporting the development of an in-house training capability, especially as it relates to the introduction of new exploitation hardware and techniques.

#### Target Resolution Test

#### Requirements

Support Center and contractual research investigating the need for, and the relative merits of, alternatives to the standard AF Bar Targets.

[Redacted Box]  
TSSG/RED/ATB/HFS

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